

REMARKS

Claims 1-6 and 9-18 are pending in this application. Claims 7-8 have been canceled. Claims 15-18 have been added.

Support for the amendment to claim 1 can be found in claim 3.

Support for the amendment to claims 2-6 can be found in claims 4-8, respectively.

Claims 10 and 11 have been amended to be composition claims rather than method claims.

Claims 12 and 14 have been amended to depend from claim 3.

Support for new claims 15-18 can be found in claims 3-6, respectively.

The specification was amended to correct typographical errors.

No new matter has been added by way of the above-amendment.

Prior Art Based Issues

Claims 1-2 and 7-14 are rejected under 35 U.S.C. 102(b) and 103(a) as being unpatentable over US 5,710,209 to Blum et al. Applicants respectfully traverse the rejections.

The Examiner has stated in the Office Action that claims 3-6 are patentable over Blum et al., since there is no motivation to make the polyurethane of Blum et al. using the parameters of claim 3. Accordingly, Applicants have taken the following actions: 1) Applicants have added new claim 15, which is equivalent to claim 3 in independent form; and 2) Applicants have amended claim 1 to

recite that the aqueous urethane polyol is produced by the method of original claim 3.

In view of action 1), Applicants respectfully submit that new method claim 15 (and dependent claims 16-18) is (are) free from the art.

In view of action 2), claim 1 is now in the product-by-process format. According to MPEP 2113, the analysis for patentability of product-by-process claims should take into consideration the following:

[t]he structure **implied** by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the ... manufacturing process steps would be expected to impart **distinctive structural characteristics** to the final product. (Emphasis added).

Accordingly, the process steps in the product-by-process claims should be given patentable weight when the process steps would be expected to form a product having structural characteristics which are distinct from the structure of the prior art product. Applicants respectfully submit that the process limitations in inventive claim 1 would necessarily result in a product having structural characteristics which are distinct from the structure of Blum et al's polymer composition.

Inventive claim 1 recites a concentration of diisocyanate monomer of 3% by weight or less in a polyisocyanate, which is a component of the aqueous urethane polyol. On the other hand, Blum

et al. use 1-methyl-2,4- and/or -2,6-diisocyanatocyclohexane as a diisocyanate monomer in an amount of at least 50 wt.% based on the weight of a polyisocyanate which is a component of the polyester polyurethane. See column 1, line 66 to column 2, line 4 of Blum et al. It is clear that Blum et al. neither disclose nor suggest that a polyisocyanate having a low concentration of a diisocyanate monomer may be used to produce the polyester polyurethane.

Furthermore, the skilled artisan would understand that this difference in the concentration of the diisocyanate would result in a structurally distinct polyisocyanate component. In other words, the polyisocyanate component of the present invention would have substantially fewer repeat units derived from a diisocyanate which has a general structure of  $O=C=N-R-N=C=O$ .

Since the process limitations in inventive claim 1 would necessarily result in a product having structural characteristics which are distinct from the structure of Blum et al's polymer composition, the inventive product-by-process claim 1 is patentable over Blum et al.

In addition, the inventive composition has advantages not seen in the prior art compositions. An object of the present invention is to provide an aqueous urethane polyol excellent in flexibility such as resistance to chipping and hiding power to smooth the evenness of a substrate. The present Inventors have found through their supreme efforts and ingenuity that only the aqueous urethane

polyol, which satisfies all the requirements and is produced by using the specific components in the specific amounts, can achieve the above object.

On the other hand, an object of Blum et al. is to provide an aqueous dispersion excellent in viscosity stability during storage, which is totally different from that of the present invention. Blum et al. neither disclose nor suggest the above object of the present invention. Therefore, a person skilled in the art would not be motivated to complete the present invention (as recited in claim 1) from the teachings of Blum et al.

Lastly, the Examiner has stated in the Office Action that Blum et al. disclose the requirement of an average number of hydroxyl groups as recited in claim 1.

However, an average number of hydroxyl groups in an aqueous urethane polyol can be calculated from a number average molecular weight of the aqueous urethane polyol but it cannot be calculated from a weight average molecular weight of the aqueous urethane polyol. Blum et al. are quite silent about the number average molecular weight of the polyester polyol, although they teach the weight average molecular weight. Generally, a number average molecular weight of a polymer is different from a weight average molecular weight of the polymer. And, typically, a number average molecular weight of a polymer is smaller than a weight average molecular weight of the polymer. Since Blum et al. do not teach the

number average molecular weight of the polyester polyol, the weight average molecular weight cannot be predicted, and hence the average number of hydroxyl groups cannot be calculated. In conclusion, Blum et al. do not disclose the requirement of an average number of hydroxyl groups as recited in claim 1.

Based on the foregoing, significant patentable distinctions exist between the teachings of Blum et al. and the present invention, and as such, withdrawal of each of the rejections is respectfully requested.

Conclusion

With the above remarks, Applicants believe that the claims, as they now stand, define patentable subject matter such that passage of the instant invention to allowance is warranted. A Notice to that effect is earnestly solicited.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for one (1) month extension of time for filing a response in connection with the present application. The required fee of \$120.00 is attached hereto.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact **Garth M. Dahlen, Ph.D., Esq.** (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an

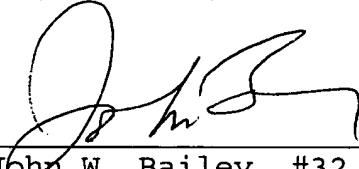
interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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